LAND USE PROBLEMS OF THE PIT RIVER BASIN
AND THE PIT RIVER INDIANS IN MODOC,
LASSEN, AND SHASTA COUNTIES IN
CALIFORNIA.

Prepared by
Jesse Garcia.

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Land Use Planning Section
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U. S. Department of Agriculture

July, 1937

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INTRODUCTION

A proposal has recently been tentatively made by the U. S. Indian Service for the relief and rehabilitation of distressed Indians in the Pit River Basin. This tentative proposal seeks to aid approximately 30 Indian households in this area by establishing for each household an operating unit consisting of 50 head of cattle. The livestock, according to the plan, are to be supplied from animals now being repaid to the U. S. Indian Service by Indian livestock men operating in other areas. These livestock men, having formerly secured loans in the form of drought-relief cattle, are at present repaying the loans each year with a part of their calf crop. To establish these new livestock units, the proposal calls for the purchase, through the U. S. Indian Service of sufficient grazing and agricultural land in the Pit River area to support a total of approximately 1500 head of cattle. The Indians are thus to be aided by an attempt to supplement the present low income of 30 households by "staking" each to a small livestock enterprise.(1)

(1) The proposal arose as the result of a conference called by the Technical Cooperation-Bureau of Indian Affairs Unit of the Soil Conservation Service in Berkeley, California, May 17, 1937. This conference was attended by representatives of the T.C.-B.I.A., U. S. Indian Service, and the Resettlement Administration. It was decided at this conference to consider tentatively the Pit River Indians as prospects for rehabilitation.

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INTRODUCTION

A proposal has recently been tentatively made by the U. S. Indian Service for the relief and rehabilitation of distressed Indians in the Pit River Basin. This tentative proposal seeks to sell approximately 30 Indian homesteads in this area by establishing for each homestead an operating unit consisting of 30 head of cattle. The livestock, according to the plan, are to be supplied from animals now being repaid to the U. S. Indian Service by Indian livestock men operating in other areas. These livestock men, having formerly secured loans in the form of drought-relief cattle, are at present repaying the loans each year with a part of their calf crop. To establish these new livestock units, the proposal calls for the purchase, through the U. S. Indian Service of sufficient grazing and agricultural land in the Pit River area to support a total of approximately 1800 head of cattle. The Indians are then to be aided by an attempt to supplement the present low income of 30 homesteads by "stabling" each to a small livestock enterprise.(1)

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As a member of the Land Use Planning Section staff of the Resettlement Administration, the writer has a direct interest in examining carefully this proposal because of its inherent land use planning character. But he has an even more immediate reason. As a member of the committee charged with the function of preparing and reporting upon the proposal, he not only is sensible to a keen interest in it, but also to an urgent responsibility for inquiry into its ramifications and its effects, if it is carried out, upon the Indians in the Pit River area.(2)

This report therefore purposes to make this inquiry by: (1) comparing the tentative proposal with efforts made in the past to aid the Pit River Indians; (2) surveying from a land use point of view certain Indian communities in the Pit River area; and (3) pointing out limitations attaching to the tentative rehabilitation plan as it affects these communities. In the light of this inquiry certain recommendations will be submitted which should be seriously considered in developing a rehabilitation program for Indians in the Pit River area.

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(2) The committee was selected at the Berkeley conference to study closer a possible rehabilitation program for Indians in the Sacramento Indian Jurisdiction and particularly the Pit River Indians, through land purchases and livestock loans. Members of the committee were:
T.C.-B.I.A.: Dr. W. W. Hill, Gene Sterling.
U.S.I.S.: Roy Nash, Superintendent of the Sacramento Indian Jurisdiction; E. M. Johnston and Douglas Clark, Land Field Agents; Dr. Gordon McGregor, Assistant Field Anhtropologist.
Resettlement Administration: Jesse Garcia, Junior Agricultural Economist.

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U.S.I.S.: Roy Bush, Superintendent of the Sacramento Indian Training Station; E. R. Johnston and Douglas Clark, Land Plant Agents; Dr. Gordon Hodgson, Assistant Field Anthropologist.
Resettlement Administration: Jesse Garcia, Junior Agricultural Economist.

Any program dealing with human relations, if it is to be carried out successfully, needs constantly to be subjected to constructive criticism and re-examination on the part of those who have taken the trouble to give the program serious thought and consideration. In this spirit of criticism, the proposition is submitted that efforts on the part of the U. S. Indian Service and others so far to aid the Pit River Indians have not generally relieved the basic and deep-seated problems confronting these Indians. These problems can be characterized as: (1) deficient subsistence, and (2) cultural maladjustment. As a consequence of not meeting these problems squarely, the efforts to aid Indians do not show appreciable progress toward economic and cultural adjustment of the Indians to an environment and a way of life which to these native Americans continue to be strange and mysterious.

PAST EFFORTS TO AID THE PIT RIVER INDIANS

Efforts have been made by the federal government, through the U. S. Indian Service, to stem the downward trend in the level of living of the Pit River Indians. This agency has aided Indians in selecting public domain allotments, has provided schools for Indian children and has made provision for educating others in public schools, has provided a semblance of a health service, has purchased small homesite tracts for homeless Indians, has recently subsidized construction of a few small houses for needy Indian families and has created a position for farm extension

agent for the benefit of the Indians.(II)*

These efforts on the part of the Indian Service appear impressive. When viewed from the standpoint of monetary costs, they are even more impressive. and, indeed, they are commendable in that they represent sincere intentions to aid Indians by alleviating their economic distress. These endeavors should therefore command the deep respect and praise of all those people who are genuinely sympathetic with the future of the Indian population.

Public Domain Allotments - Allotting to Indians parcels of public domain land, ranging in size up to 160 acres, was motivated by a desire to provide land resources to these Indians to aid them in producing a subsistence. This end was not achieved for several important reasons. All the limited amount of agricultural lands, as well as the desirable range land, had already been appropriated by white settlers. There remained only mountainous and poor range land, in most instances without water. Local pressures were usually exerted to keep any remaining usable range land in the public domain out of Indian hands. The mechanical process of allotting land from a map without field inspection, resulted in Indians getting, in most cases, allotments comprising the poorest of the remaining public domain.(II)* These allotments, being in many cases inaccessible, without water, and at best, poor grazing land, required large acreages for productive use. In few instances allotments are used merely as isolated

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*See Bibliography

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homesites, but in most instances they remain unoccupied, idle or used free by white livestock men. Safely it can be said that the mechanical transfer of title to a type of land represented by allotments really contributed but little to the solution of the problem of deficiency of productive land among the Pit River Indians.

Education - The provision of educational facilities for Indian children in the form of Indian day schools at the Likely and Lookout communities and through the opening of public schools to Indian children in other areas, has been an effort to fill the dire need for Indian education. In most instances, however, the low economic status of Indians is reflected in the poor and unhealthy appearance of Indian children who attend school. Presence of these children in the same school with non-Indian children is repugnant to the local white residents. This unfavorable attitude toward Indian children attending public schools plus the economic impossibility of some Indian households to send their children to school at all, make it difficult for Indians to take optimum advantage of the educational facilities available to them. Offering of educational facilities, without stabilizing at a higher level present home conditions of school children, has but uncertain advantages.

Health - Medical services or services of a field nurse are available to a portion of the population in this area. Such services are efforts to lessen the present sufferings of those treated. They do nothing,

however, to adjust the causes giving rise to trachoma, tuberculosis, and other ailments brought on principally by undernourishment, poor housing, and forced idleness of this total population.

Land Purchases - Six small parcels of land have been purchased for Pit River Indians. The objective of these purchases of parcels has never been clear to the writer. If the objective was to provide arable land for these Indians, the efforts were wasted, as all lands purchased, except the parcel at Alturas, are not arable and at best are of doubtful grazing value. If the object was to provide homesites, poor choice is evident as all but one are waterless, rough, and isolated and would require large expenditures to make such lands habitable. Indians already possessed thousands of acres of allotments just as suitable for homesites as lands purchased. The contribution of these purchases to the solution of the problem of seriously deficient means of producing or earning a livelihood is questionable.

Rehabilitation Homes - A few homes have been built for needy households in this area. As a part of a broader plan of rehabilitation, aid in home construction could be important but as an end in itself home building is but a hollow contribution in the face of extreme need for means of obtaining the very minimum food requirements.

Farm Extension Agent - Nearly complete absence of productive land resources makes the provision of Farm Extension services ironical. The existence of numerous problems, however, taxes the time and resources

of this agent. When adjustment of land use problems in this area can no longer be put off, the experience of this agent can be invaluable in the determination of a desirable program.

All these efforts have an important part to play in a broad rehabilitation program, provided such a program attacks basic problems in an effective manner. Without provision for soundly raising household incomes above a degenerating level and without affording some basis for cultural adjustment, however, all the funds expended in existing services will not be spent in the most effective manner.

PRESENT PLAN TO AID THE PIT RIVER INDIANS

The present tentative plan proposed by the U. S. Indian Service to rehabilitate the Pit River Indians presumes to differ from the past efforts. It strives to attack the basic problems of low income level and cultural maladjustment. Far from serving merely as a measure providing for temporary relief, the present plan is designed to serve on a long-time plan which, in its application and its development, contemplates a modification of the land use pattern of the area. By the establishment of livestock units, it seeks to direct the use of land and to place 30 households on a more stable basis than they enjoyed formerly. After a period of time, it is expected, the stability in production and in income of the 30 households will prove significant enough to have affected favorably the stability of others in the area. By thus lifting the economic level of the Indian population in the

area, the plan presumes that the way will be opened and facilitated for cultural adjustment. The actual contribution of this proposal, if adopted, however, will depend on the extent of consideration given factors briefly referred to in the sections of this report pertaining to the limitation of the proposal, and the recommendations for the rehabilitation of the Pit River Indians.

PIT RIVER AREA

Before pointing out the specific limitations to the proposed rehabilitation plan and before submitting recommendations, it is necessary to survey, from the standpoint of land use, certain specific areas in the Pit River country in which Indian households are to be found. The areas selected for more detailed discussion are as follows: (1) Alturas-Likely area, Modoc County; (2) Lookout area, Modoc and Lassen counties; (3) Fall River area, Shasta County; and (4) scattered areas in Modoc and Shasta counties. The proposal recommends that lands be purchased in the first three areas. In regard to the scattered areas where Indians are located, no land purchases are contemplated. It is proposed that progressive Indians in these scattered areas be encouraged to move, in order to take part in the rehabilitation projects in the other areas.

It should be pointed out that these areas are not inhabited wholly by Indians. The non-Indian population lives side by side, so to speak, with the Indian. The difficulties arising from the limitations of the natural resources of the land and from the economic and social maladjustments peculiar to the areas are therefore shared by the Indian and non-Indian population alike, hence they face similar problems. In addition, however, the Pit River Indians face problems distinctly peculiar to Indians in this area because of the nature of their economic and social maladjustment.

A program designed to adjust Indian problems of population and resources

cannot be developed independently of a recognition of the agricultural practices and land use problems characteristic of the whole area under examination. This is particularly true in areas where the total land resources are limited, and where multiple uses of such resources are essential for the best interests of all concerned as is the case in the Pit River area. The Indian program must at once be congruous with the larger economic and cultural pattern and be applicable to the Indians trying to make a living within such area.

This section of the report will accordingly be divided into two parts. The first part will be devoted to: a brief descriptive outline of the Indian population in the Pit River area, a summary of the present physical and economic pattern, and a delineation of the land use problems characteristic of the area as a whole. The second part of the section will be concerned with brief surveys of each of the areas tentatively selected as areas in which land might be purchased and livestock enterprises established. In each of these surveys the agricultural pattern of the particular area will be described. Immediately following such characterization of the general pattern, a description of the Indian population and resources in each area will be presented. This account will serve to point out the peculiarity of the land use problems confronting the Indians in this area.

cannot be developed independently of a consideration of the conditions
therein and that the problems characteristic of the South and Inter-
mountain. This is particularly true in those areas of total zone
resources are limited, and where multiple use of land demanded for
economical for the full benefits of all concerned as is the case in
the Tri River area. The Indian program must be seen in conjunction with
the larger economic and cultural patterns and be adjustable to the la-
tions trying to make a living within such areas.

This section of the report will accordingly be divided into two parts.
The first part will be devoted to: a brief description and history of the
Indian population in the Tri River area, a history of the present
physical and economic patterns, and a delineation of the land use pro-
blems characteristic of the area as a whole. The second part of the
report will be concerned with brief sketches of each of the seven
statistically selected areas in which land units be investigated and
literature substantiation additional. In each of these sketches the soci-
cultural pattern of the particular area will be described. Tentatively
by relating such characteristics of the general picture, a descrip-
tion of the Indian population and recommend it could have with the pro-
gram. This approach will serve to point out the desirability of the
land use problems confronting the Indian in this area.

GENERAL LAND USE PATTERN OF THE PIT RIVER AREA

Indian Population

Pit River Indians at present total approximately 500 Indians, comprising 70 to 80 households. These Indians reside in groups ranging in size from a few households to 15 households, widely scattered throughout the Pit River area in Modoc, Lassen, and Shasta counties in northeastern California. This Indian population once numbered over 3,000 and was composed of scattered or wandering tribes subsisting mainly on acorns and other plant and animal life of the area.

Intrusion of settlers with the resulting appropriation of the Indian land resources and the exploitation of the fish and game created considerable friction between the native population and the settlers. Wars were long and bloody in this region, but the civilian adventurers, together with the help of the U. S. Army, aided the settlers in finally conquering the Indians. As the result of the wars, the Indian population in the Pit River Basin was greatly reduced and scattered. Left without land resources sufficient to provide a minimum supply of wild products for bare subsistence, with no efforts made by the conquering whites to replace their former means of subsistence with productive land or labor opportunities, the Pit River Indians are today fighting the second battle for existence against the degenerating economic forces. Not as spectacular as the first defeat, but just as certain, is pending the defeat facing these Indians through the forces of a deficient subsistence, evidenced throughout the area by a decreased population in a serious stage of social and economic maladjustment.

GENERAL LAND USE PATTERN OF THE PIT RIVER AREA

Indian Population

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on moose and other plant and animal life of the area.

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Physical and Economic Pattern

The physical and economic pattern outlined below attempts to sketch briefly the economic environment in which the Pit River Indians generally reside and in which the proposed rehabilitation projects, through land purchases and livestock loans, are to be established.

Topography - This area is topographically divided by high mountainous divides into numerous well-defined valleys of varying sizes. At the lowest point in this area near Fall River Mills, the altitude is approximately 3000 feet above sea level; the outlet of Big Valley in the Lookout area is 4115 feet; Alturas is 4345 feet; Hot Springs, 4300 feet; Likely, 4390 feet; and the Jess Valley outlet, 5050 feet. (I)*

Geology - The Pit River area is situated on the western fringe of the Great Basin. It is bounded on the east by the Warner Range and extends westerly to Fall River Valley. The climate, topography and geology are characterized by the general features common to that area; namely, semiarid, undulated plateaus interspersed with mountain ranges,and with lava rocks and ancient lake beds predominating. The Fall River area has these features modified somewhat by a lower altitude and slightly higher rainfall. (I)*

Soils - Soils in the Pit River area are classed according to their relative topographical distribution, as follows: River bottom soils, valley floor border soils, soils on rolling or terrace lands, and soils on range lands. (I)*

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* See Bibliography

River Bottom Soils - These soils generally lie below the flat flood-planes of streams. In Big Valley, Hot Springs Valley, and South Fork Valley they may be relatively deep. Such soils are largely composed of heavy loams with some clay or adobe. In Jess Valley they may be composed of muck and peat, while in the South Fork Valley mucky loam is found.

Valley Floor Border Soils - These soils lie on the gently sloping lands slightly above flood-planes of the streams. Such lands include alluvial fans. These lands consist of loams and clay loams. In Jess Valley and East Creek, soils are largely gravelly and sandy loams. Such soils are very light and permeable and require frequent irrigation.

Soils on Rolling and Terrace Lands - Rolling lands are variable in depth and consist of gravelly and sandy types. The deeper soils, if reached by high-line irrigation ditch systems, produce good crops. Soils of undulating terrace lands are generally shallow. It is difficult to get water on such lands, and the soils dry quickly.

Soils on Range Lands - Surface soils covering the major part of plateau and mountain areas consist of heavy loams or clay loam and are generally strewn with volcanic rock boulders.

Water Available for Irrigation - The mountainous boundaries of major valleys make the water supplies and uses in each valley relatively unrelated. The irrigating season in the upper Pit River part of this

area extends from April 15 to September 30, with live-stock requiring water until November 1. During April and May, a surplus of irrigation water exists. The supply decreases rapidly, being deficient for irrigation requirements by the last of June unless streams are supplied by perennial springs. During the meadow haying season, extending over the last three weeks in July, demand for water decreases. By August 1, the water supply is at its lowest stage and in many streams livestock water is inadequate during the months of August, September and October. (I)*

Crops - The major crop in this area is meadow grass hay, varying from poor quality grass on saturated meadows to more nutritious meadow grass grown on better drainedirrigated areas. Native meadow grasses are generally fortified by sowing cultivated grasses and clover. One crop is harvested in July and another short crop is pastured.

Meadow hay is produced on approximately 85 per cent of the irrigated acreage. Alfalfa is produced on approximately 12 per cent of the irrigated area and this acreage lies largely on plateaus, sloping, and higher lands. (I)*

Dry farming is comparatively small, the principal crops being rye, barley, and wheat, named in order of importance.

Ownership and Land Pattern - A large portion of the land in this area is in public ownership, largely being either in National Forests or in Public Domain land. Much of the remainder is held privately in

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large units, usually extensively utilized. An indication of the size of irrigated holdings is given by the census figures crediting Modoc County with an average sized farm of 724 acres, of which 125 acres are irrigated. In the Hot Springs Irrigation District, the average size farm is 270 acres. In Big Valley, it is 320 acres. (III)*

Summary of the Major Land Uses

Grazing and Agriculture - Grazing in this area is the major industry as grazing land comprises the major portion of the total acreage. This grazing land is largely controlled and administered by public agencies, with the U. S. Forest Service and the Modoc-Lassen Taylor Grazing District controlling the use of the major part. Agricultural uses of the land are closely linked with the grazing industry by producing winter feed, while grazing land furnishes the summer feed. The carrying capacity varies from four to eight acres per cow month depending on the local quality of land and climatic conditions. On a conservative average, cattle must be fed approximately six months of the year. Feed requirements for this period will average one and a half tons of hay per animal unit.

Lumbering - In the northwest portion of Modoc County excellent stands of timber are found. In former times the lumber industry formed an important part of the total income of this area. With

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* See Bibliography

large units, usually extensively cultivated. An indication of the size of individual holdings is given by the census figures available for Bucks County with an average farm size of 124 acres, of which 118 acres are tillable. In the Tri Counties Irrigation District, the average size farm is 270 acres. In the Tri County, it is 280 acres. (113)*

Summary of the Lower Bucks Case

Location and Characteristics - Starting in this area is the major industry as growing food vegetables the major product of the water company. This growing land is largely semi-irrigated and suitable water by public supplies, with also a - a fruit service and the Bucks-Lehigh Region Training District emphasizing the use of the right land. Agricultural area of the land has already lapsed with the growing industry by producing alkaline land, which growing land diminishes the summer land. The surrounding suburbs taken from the urban areas put now under competition on the local quality of land and alternate possibilities. In a metropolitan area, matters would be the economically air market of the land. Land speculation for this varied will attempt one land a half year at any rate against land.

Conditions - In the substantial portions of Lower County available planes of tillage are limited. In Lower Lines the Bucks Lehigh forms an important part of the total income of this area. The

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* See Bibliography

the present upward trend in the demand for lumber plus efforts to place timber production on a sustained yield basis, the lumber industry may again play an important part in the permanent development of the area.

Recreation - Scenic features plus excellent hunting and fishing make this area attractive to recreationists. Programs aiming at increasing the fishing and hunting resources in this area through restocking and protection, and the construction of new roads or improvement of old roads promise to increase the recreational value of the area. Increase in tourist travel and the number of hunters and fishermen will contribute to the economic development of the area.

Land Use Problems

Agricultural Problems - The short growing season, high altitude, deficient rainfall for dry farming (except possibly in the Fall River area), deficient water supply for present irrigated acreage, uncertain water rights, soils extremely variable in quality with only a limited acreage rated as good, and poor drainage, all have given rise to numerous agricultural problems. In the Lookout area, farm abandonment is prevalent due in part to the small size of the farm units. (IV)*

Over-Population - A problem of over-population exists in this area. It can be remedied only by creation of employment through the development of the lumber industry and the recreational resources unless

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* See Bibliography

Tiruvellaly Area

Present Agricultural Pattern

Cultivated Acreage - In the South and East Tahsils considerable from the practically or totally no fallow. Nearly 20,000 acres of land are irrigated from minor tanks-cum-rivulets that serve, in some instances, as both irrigation and drainage structures. Such irrigation conditions are either inherently equal or more to natural correlations of several elements. In this area water rights, based largely on agriculturists and landholdings, are assumed to be adjusted in the land. Water flow of streams is sufficient for entirely diversion right. In any overexploited land problem problem, water rights as a general feature of agricultural lands in this area appear to naturally elastic. Consideration would also be given to the proposed projects for the addition of water flows per water day. Water requirements range up to 4.5 acre feet per acre in India adequately measured. Water is generally supplied by surface flooding. The short season includes the average production of the harvestable dry crop and one previous crop. Dry plants range from three-fourths to two hundred crop.

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A. A. S. in the Department of Agriculture proposed a land programme in the year reports (1. 2. 3. and Department relations a leading been in Lanka Bureau) (2) S. 3. Statistical Survey, Department of Agriculture.

some of the people are moved elsewhere. Rehabilitation usually appears to be desirable. (IV)*

Over-Grazing - Over-grazing of range lands is a serious problem in Modoc County. A larger number of livestock are grazed than the range resources should carry for the proper conservation and development of these resources. (III)*

Competition for Grazing Resources Between Game and Stock - An increasingly important use of land affecting this area is in connection with both summer and winter range for deer and antelope. Considerable controversy prevails in this area regarding the apportionment of the uses of land between livestock and game animals. This controversy is manifested by the strained attitude of the local people toward various government agencies administering federal lands. (IX)*

Coordination of Multiple Uses of Natural Resources Needed - A lack of coordination between private and public interests regarding present and future programs for the multiple use of land resources in this area was brought out by a 1935 report of the Land Utilization Committee of the State Planning Board.[3]

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(3) *Statement of the Land Utilization Committee of the California State Planning Board on Problems of Land Use Management and Jurisdiction in Lassen and Modoc Counties, California, 1935. In this report, interests and jurisdictions were found to be conflicting. Interests in conflict in the area in order of their importance: (1) Livestock, husbandry and grazing; (2) Lumbering, forestry and dependent industries; (3) Wildlife and recreation. Governmental agencies with conflicting jurisdiction over natural resources: (1) Modoc-Lassen Taylor Grazing District, administered by the Department of Interior, Division of Grazing; (2) U. S. Forest Service, Department of Agriculture; (3) Division of Fish and Game, California State Department of Natural Resources; (4) The

* See Bibliography

LAND USE PATTERN OF PARTICULAR AREAS

Alturas-Likely Area

General Agricultural Pattern

Irrigated Acreage - In the South Fork and Jess Valleys extending from the proximity of Likely to Alturas, nearly 20,000 acres of land are irrigated from minor constructions that serve, in some instances, as both irrigation and drainage structures. Such irrigation constructions are either individually owned or owned by informal associations of several operators. In this area water rights, based largely on appropriations and beneficial use, are assumed to be attached to the land. Summer flow of streams is deficient for existing diversion rights. In any contemplated land purchase program, water rights to proposed purchase of agricultural lands in this area should be carefully checked. Consideration should also be given to the present procedure for the adjudication of water rights now under way. Water requirements range up to 4.2 acre feet per acre on lands adequately watered. Water is generally supplied by surface flooding. The short season enables the average production of one harvested hay crop and one pasturage crop. Hay yields range from three-fourths to two tons

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(4) continued

A. A. A. in the Department of Agriculture proposed a land purchase in the region; (5) U. S. War Department maintains a bombing base in Lassen County; (6) U. S. Biological Survey, Department of Agriculture.

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per acre. The average is one and one-half tons per acre, or enough to feed one animal unit during the winter feeding period. (I, V, XI)*

Irrigable Acreage - In the South Fork and Warm Springs Valleys, and in the immediate vicinity of Alturas, there is a gross total irrigable acreage of 46,000 acres. There are 40,000 acres suitably located and adapted for irrigation if proper water storage facilities are made in the Jess Valley reservoir site. (XI)*

Irrigation District - Hot Springs Valley Irrigation District is at present the only active irrigation district in this area. It includes lands adjacent to the Pit River from northwest of Alturas to a few miles west of Canby. The district was organized September 27, 1919, with a total assessed acreage of 9,497 acres extending along the Pit River between Alturas and Canby in Modoc County, California. The district was formed to supplement the flow of the Pit River, which at times failed in the summer because of the flashy character of such flow and increased use of this flow on lands in the higher South Fork Valley. The district holds permit to store 50,000 acre feet of water, but the annual flow on which the permit is held is unreliable. In one year out of five a complete failure of water may be expected and in the other four years 5,000 to 10,000 acre feet may be depended upon. (I)*

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* See Bibliography

per acre. The average is not had normally once per year, or enough to feed one animal unit during the winter feeding period, (p. 7-16).

Irrigable Acreage - In the South Platte and Lower Platte Valleys, as in the Scottsbluff vicinity or elsewhere, there is a great total irrigable acreage of 50,000 acres. There are 15,000 acres actually limited and adjacent for irrigation if proper water storage facilities are made in the cross valley reservoir sites. (p.7-

Irrigation Districts - The Sprinkle Valley Irrigation District is at present the only active irrigation district in this area. It includes lands adjacent to the Old Silver Fox Reservoir of Alma to a few miles west of Hardy. The district was organized September 27, 1922, with a total assessed acreage of 2,577 acres extending along the Old Silver between Alfalfa and Hardy in Gosper County, Nebraska. The district was formed to supplement the flow of the Old Silver, which at times failed in the summer because of the Hardy diversion of such flow for increased use of Alfalfa in Lower to use higher Tuck Fork Valley. The district lands permit to irrigate 50,000 acre feet of water, but the annual flow on which the permit is based is questionable. In one year out of five, complete failure of water can be expected and in the other four years 5,000 to 15,000 acre feet may be depended upon. (p.

- See Hydrology

Water delivery is made by releasing stored water into the Pit River and then by use of a main diversion canal feeding laterals on individual holdings. Bonds in 1929 totaled $160,000 with $32,000 having been retired. Assessments were based, in 1929, on the basis of the following assessed values: Meadow and alfalfa lands, $30 per acre; grain lands, $15 per acre; grazing lands, $10 per acre. In the 1925-29 period, total assessments ranged from $7.10 to $10 per acre. (X)*

Non-Irrigated Acreage - Owing largely to physical or economic reasons, irrigation water is not available to a certain acreage of the agricultural land in this area. Some 40,000 acres of such lands are largely located on the higher portions of agricultural areas and, if farmed at all, must be dry farmed. Rainfall in this area ranges from six inches to sixteen inches annually and falls largely in the winter. Success of dry farming is highly dependent on this meager rainfall being distributed so that it extends into the short growing season (average growing season is 70 days and damaging frosts may be expected every month of the year).

Indian Aspects of the Alturas-Likely Area - The framework of the general agricultural economy in this area has been outlined. The resources in the area have been briefly described, the agricultural practices have been sketched, and the land use problems characteris-

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* See Bibliography

Water delivery is made by gravity-flows water into the fig-
ders and then by use of a pump elevator used during capacity
or irrigated seasons. Down in 1960 totaled 4,000,000 acre 1,000,000
having been pumped. Assessments were raised, in 1958, on the
basis of the following assessed values: Under one acre-foot
and per acre-foot-lands, 2.5 per acre; irrigated lands, 5.0 per
acre. In the 1960-61 period, total assessments ranged from 6.50
to 7.25 per acre. (4)

Non-irrigation water - Water lawfully or physical or economic
reasons, irrigation water is not available to a certain acreage
of the agricultural land in this area. Some 40,000 acres of such
lands are largely located on the alluvial patches of agricultural
areas only if fenced or oil, must be dry farmed. Ordinarily in
this area, change from the course to another frame (usually one
field largely in the alluvial). Because of dry farming is slight
dependent on this acreage material being distributed so that in
reality the state growing season lengthy, growing season is
70 days and dwelling frost-any be anywhere every month of the
year).

Farming trends of the Alluvial-Dry area - The farmers of the gen-
eral agricultural economy in this area has been decline. The re-
sources in the area have been brought downfarm, the agricultural
conditions have been changed, and the land use problems change be-

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4. See Bibliography.

tic of the area as a whole have been pointed out. This brief survey will serve as a background upon which land use problems distinctly Indian in nature can be delineated.

Indian Land Resources

Alturas - A 20 acre rancheria was purchased and is held in trust by the government for use by Indians in the area. The land is of fair quality but has no irrigation water available and is too small a unit for dry farm use. Several families use this as a homesite. Some of the Indians own mountain allotments and homesteads with limited grazing value. The small size of the grazing units further limits the feasibility of using such lands. These lands are largely idle or used by white livestock men free or for only a small fee.

Near Alturas, Indians purchased a small acreage and built homes with funds secured from the sale of allotments. No water or suitable soil for garden production is available here. Part of this land is now in doubtful status because of tax delinquency. (III)*

Likely - A 40 acre rancheria was purchased and is kept in trust by the federal government for use by Indians. The land contains shallow soil with numerous outcroppings of lava rock. It is practically worthless for agricultural purposes and has no water

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* See Bibliography

[illegible]

[illegible] - A 30 acre production was produced that is sold in turn by the processors for use by [illegible] in the area. The land is of high quality and has an irrigation water available and is too small a unit for any farm use. Several families are this as a [illegible]. Some of the [illegible] are managing elsewhere and [illegible] with limited growing [illegible]. The small size of the growing units further limits the feasibility of using [illegible]. These farms are largely life or used by white farmers, for [illegible] or for only a small fee.

[illegible], [illegible] produced a small average net [illegible] [illegible] income from the sale of [illegible]. In order to [illegible] with the growing production is available here. Lack of [illegible] land is also is [illegible] because of the [illegible].

(12)

[illegible] - A 40 acre production was produced and is sold in turn by the [illegible] processors for use by [illegible]. The land available [illegible] with [illegible] [illegible] [illegible]. It is [illegible] problems for [illegible] [illegible] [illegible] [illegible]

- See [illegible]

supply. The only use now being made of this rancheria is for a graveyard and a public school. Indians in this area hold numerous allotments and homesteads used for homesites. Such small land holdings comprise only poor grazing land and would require huge acreages for productive use.

Indian Population - Approximately 150 Indians are distributed in the Alturas-Likely area.(4) Near the town of Likely, 11 households comprising 59 members reside on scattered allotments. Near the town of Alturas, in an Indian camp located on Indian privately owned land and on the federally purchased rancheria, a total of 68 Indians live. Six households, with a total of 21 members, are scattered near Hot Springs and Canby. This total Indian population has become highly demoralized socially and economically because of the limited opportunities afforded them and because of maladjustment to a new social and economic environment. Their land resources consist of scattered parcels of grazing land of extremely limited value, rendered useless because of the lack of agricultural land needed for the production of winter feed. Opportunities of earning subsistence are practically absent in this area except during extremely short hay harvest periods in the summer. Their chances of receiving work are further diminished by their abnormally low social and economic level.

The serious deficient annual family income has been vitally supplemented in the past by the gathering of acorns and other wild products, as well as hunting and fishing. This important source of

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(4) See Table I in Appendix (A)

[illegible]

[illegible]

[illegible]

subsistence, however, is rapidly decreasing as the result of a trend toward more intensive use of natural resources by livestock, lumber, wildlife, and recreation interests. Wild game programs involving the propagation and regulation of the game has had two adverse affects on the Indian population. The first arises from the increase in the total stock of game animals that consume acorns and other wild products. Acorns form an important, and in many instances, vital part of many Indian groups' daily diet. Any increase of game animals therefore decreases such supply of food available to the Indians. Secondly, strict protection and regulation of game in this region has made it impossible for the Indians to secure food from this source as in the past. Since no Indian reservation exists in this region capable of producing game, Indians are forced to comply with the State game laws if they secure game. The purchase of hunting permits is almost prohibitive to Indian households with little, if any, cash income. Similarly, exploitive depletion of the fish in streams has led to strict regulation and protection of the remaining supply for the benefit of the sportsmen but reducing the Indian food supply from this source. Over-grazing and logging have further decreased the supply of wild products on which the Indians have depended heavily for their subsistence.

Lookout Area

General Agricultural Pattern

Irrigated Acreage - Approximately 23,000 acres consisting of

meadow lands, reclaimed swamps, and other lands are now irrigated by diverting the annual flow from creeks and rivers with inexpensive and inefficient diversion canals. At present the water supply is deficient for areas now under irrigation because of low flow during the growing season. (1)*

Irrigable acreage - A net irrigable area of 30,000 acres is located within reach of a gravity canal system from a possible storage site in Round Valley. An additional 2000 acres are irrigable from diversion on the Pit River above Lookout. An adequate supply of water would be available for the irrigated and irrigable lands if proper storage and distribution structures were constructed.

Irrigation Districts - Various proposals for the organization of an irrigation district have been discussed, but recent developments are not known. Past and present organizational proposals consider the storage of water in the Round Valley reservoir site. Any organization of a district will affect all irrigated and irrigable lands in the area. (X)*

Non-Irrigated Acreage - Owing to either cost or present deficient supply of water in the valley, approximately 40,000 acres are dry farmed. (1) * Hazards of dry farming in this area, as in the Alturas-Likely area, include: short growing season, (damaging frosts every month of the year), inadequate and uncertain rainfall, and high elevation.

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* See Bibliography

Indian Aspects of the Lookout Area

Indian Land Resources - For Indians in this area, the U. S. Indian Service purchased a 10-acre and 40-acre plot for homesites.(5) These are located on practically desolate rock strewn lava plateaus. The State legislature, under pressure to "do something" for these Indians, set aside an additional 360 acres of scab-land for them. (VI)* Besides these three desolate homesite tracts, Indians have numerous allotments and homesteads in the surrounding hills of at best extremely limited grazing value. At present all but two allotments are idle or used free by white livestock men. (II)*

Indian Population - At the time of the first settlement, there resided a large number of Indians in this valley. Since that time the Indians have greatly decreased in numbers. In a recent report, Dr. Gordon McGregor places the number at approximately 19 households with a total of 74 Indians. (II)*

Two households live near the town of Bieber, five have allotments around Adin on the east side of the valley, one on a white man's ranch, six close to the rancheria at Lookout, and five on the rancheria. Only one house-hold can be said to be without serious need. This population of 74 Indians existing in serious need, constitutes an element of the total population far below the subsistence level of the lowest income group of the non-Indian population. It is doubted if the value of household income, in the form of cash and cash value of food products outside of acorns, will average $50 per year. A short hay season offers

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* See Bibliography (5) See Tables I and II in Appendix (A)

Indian Levels of the Income Scale

Indian Land Ownership - For Indians in this area, the so-called Dawes Commission provided a 160-acre and 40-acre plot for homesteads.[5] These are treated as practically sacrosanct that should have priority. The Indian Legislature, under pressure to "do something" for these Indians, has made an additional 320 acres of grass-land for them. [5]. Indian Chiefs have distinct hereditary wealth, indicate their superior influence and importance in the community, while of at least average intelligent speaking ability. At present all but the albinoes are full or half bloods by white intermarriage. [5]

Indian Population - At the time of the first settlement, there evidenced a large number of Indians in this valley. Some that when the Indians have greatly increased in numbers. In a recent survey, the Indian Agency places the number at approximately 75 households with a total of 75 children. (1)*

The Guaranteeing line near the town of Pryor, City Open Alternate strong ties on the east side of the valley, one on a white man's ranch, all close to the presence of Indians, and close to the reservation. Only one house-hold has to sell to by without adjoining ranch. This population of 75 Indians actually in western ward, constitutes an element of the total population far below the subsistence level of the lowest income group of the non-Indian population. It is doubted if the value of house-hold income, in the form of cash and cash value of food produce sub-sistence, will average $50 per year. It about one hundred dollars

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* See Appendix (5) See Tables I and II in Appendix (6)

the only opportunity for a wage income to a number of able-bodied members of households. A smaller number get additional work on hay and livestock enterprises. With their limited possible wage income and little or no relief aid, heavy dependence is laid on the rapidly decreasing supply of wild products.

Fall River Area

General Character of Area - This area lies in Shasta County in the narrow Fall River Valley. Livestock and complementary grain and hay enterprises exist here as in the Lookout and Alturas-Likely area. A total of 50,000 acres of arable land are to be found in the Fall River Valley. (Sandy loams and adobe are the predominant soil types with about one-half the arable area underlaid at a depth of two feet with a hardpan). (XI)*

General Agricultural Pattern

Irrigated Acreage - Only a small acreage is irrigated by natural overflow of the river on former swamp lands or by pumping. Small areas are sub-irrigated. Grain, grain hay, wild hay, and alfalfa are the major crops. (XI)*

Irrigable Acreage - An extensive acreage of irrigable land exists in this valley. Fall River Valley, however, is a flat plain, tilted on a northerly direction with a slope of three feet per mile toward the source of Fall River, which flows southerly. The result is that irrigation is impossible by diversion from the Fall River, except

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* see bibliography

the only opportunity for a very large income to a number of additional members of humanity. A smaller number get additional work on day and Sunday schedules. With their limited possible wage income and little or no relief aid, many households in Jail in the capital, decreasing supply of milk products.

...Jail Town Area

Natural Resources of Area - This area lies in Santa County in the various Jail River Valley. Livestock and subsistence crops are the subsistence which they do in the lowland and flatness-likely area. A total of 85,000 acres of crops land can be found in the Jail River Valley. Heavy loam and adobe are the predominant soil types with about one-half the acreage area maintained as a depth of two feet with a hardpan. [12]

Natural Institutional Setting

Physical Barrier - Jail, a small village is located in natural overflow of the river on farmer owned land on 3 acreage. Jail cross six sub-irrigated, lands, grain and, while are, also, alkali are the major crops. [13]

Utilities Service - An adequate supply of irrigation and water in this valley. Jail River Valley Canal, is a flat plain, flows on a northerly direction via a drop of some feet per mile through the center of Jail Town, which lies approximately. The canal is two irrigation is impossible to transfer from the Jail River, around

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* See Illustration

for a small area in the northern part of the valley where land lies one foot to three feet below the level of the river. Water may be pumped from underground with lifts from 10 to 20 feet, according to the location within the valley. (X)*

Water Rights - Mt. Shasta Power Corporation purchased all riparian lands in Fall River Valley and based its water right to all unappropriated water in Fall River on such property rights when it developed power near the junction of the Pit and Fall rivers in 1922. Recent efforts of Fall River land owners to organize an irrigation district to pump water from Fall River were opposed by the power corporation. The courts, in ruling in favor of the power corporation, asserted that no unappropriated water remains in Fall River. (X)* If irrigation should be contemplated on purchased lands, it would be advisable to see if underground waters are available for appropriation in this valley.

Non-Irrigated Acreage - A slightly longer growing season and higher rainfall make this area the most favorable dry farm area of the three areas herein discussed.

Indian Aspects in the Fall River Area

Indian Land Resources - No Indian rancherias or reservations exist here. Allotments and homesteads issued to Indians are scattered through out the mountains. Certain Indians have sold their allot-

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* See Bibliography

ments through the Indian office and have acquired a small acreage of arable land.

Indian Population - There are 15 households totaling 41 individuals living in the Fall River Valley.[6] Five households are located near the small town of Day on the east side of the valley, nine on the west side of the valley, and one near the town of McArthur. This group of 15 households is industrious and shows evidence of a desire to raise its economic status. In their efforts to do so, these Indians were aided by money secured from the sale of allotments to the Pacific Gas and Electric Company, using the money to buy fair agricultural land. Six households of 23 members are located near the town of Fall River Mills. This small group secures a precarious subsistence from wood cutting and from other work during the short harvest season.

Scattered Indian Groups[7]

Near the village of Big Bend are located 10 households with 43 members. These Indians have access to mountainous allotments and to a Federally purchased 80 acre rancheria, worthless for agricultural purposes. This group is in an area offering no possibilities for wage work and is maintained almost entirely by meager relief aid.

Montgomery Creek rancheria, a worthless 72 acre plot purchased for Indians in this area, is occasionally occupied by two households existing

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(6) See Table I in Appendix (7) See (III) in Bibliography.

[illegible] through the Indian settlers who have acquired a small acreage of arable land.

Indian Dependencies - There are 19 dependencies totaling 41 individual holdings at the Fall River Valley.[1] This dependencies are located near the small town of Ung on the east side of the valley, also on the west side of the valley, and one near the town of Yarrow. This group of 19 dependencies is distributed on three villages of a county in which its economic status. Is their efforts to do so, these Indians were aided by money received from the sale of allotments to the Pacific Gas and Electric Company, using the money to buy fifty equivalent farms. The dependents of 19 members are located near the town of Fall River Mills. This small group possesses a prosperous dairy farm and utility, and farm river-work during the slack farm work season.

Scattered Indian Groups[2]

Four the villages of Big Bend are located 20 homesteads with 65 members. These families have banded to maintain sidehoods and to a remarkably prosperous 40 acre standards, workings for agricultural purposes. This group is in an open effort to consolidate for map work and in maintaining element activity by major point aid.

Dependents Group Summary - Summarizing the group just mentioned, the Indians in that area, is economically secure, by the homestead entries

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[1] See Chart I in Appendix [2] See (Ibid) on Appendix.

on acorns and what relief work they are given.

Along Hat Creek and in the town of Burney are located 10 households of 62 individuals. All Live on allotments. Only two men have regular employment. Six men work on relief projects part of the year and work on ranches during the short summer. One man is permanently on relief and supports a family of nine on $35 per month.

In Dixie Valley eight families with 25 members are existing under the most tragic and poverty stricken conditions of any of the Pit River groups. This small group is the remnant of one of the largest and most powerful bands in the Pit River country. The isolated location 30 miles from a highway, and the fact that they are obliged to live on non-arable land, limit the means of subsistence of these Indians to what work a few of them may get during the summer on the one ranch in the area. County aid has helped several but other aged and needy Indians have never been given consideration.

LIMITATIONS ATTACHING TO TENTATIVE PROPOSAL TO REHABILITATE THE PIT RIVER INDIANS

It is here recommended that details of the proposed plan should be worked out with the careful consideration of the following limitations:

1. Rehabilitation program will aid only small part of needy Indians - The most important limitation of the proposal is that it proposes to include but a small part of the total population in need. Approximately 30 households are expected to be aided. The limited funds that are to be made available for land purchases and the high cost of establishing livestock units in this area may make it impossible to aid but a few households if such livestock units are launched in a manner that reasonably assures success.

2. Rehabilitation program will affect only small number of needy Indians - A 50 head livestock unit requires a large capital investment, a large production credit fund, and offers but small and uncertain returns per dollar invested.

Capital Investment Required(8)

	Per Household		For 30 Households	
	Acreage	Value	Acreage	Value
Range Land	1200	$6000	36,000	$180,000
Agricultural Land	40	1200	1,200	36,000
Improvements and Equipment		800		24,000
Stock		1500		45,000
Total		$9500		$285,000
Production Credit (1½ years)		600		18,000
Total		$10,100		$303,000

(8) See Appendix (C) for basis of computation.

3. Pit River area over-grazed - Even though sufficient capital is available for the initial investment and production credit, the problem exists of securing the necessary types of land for a relatively sound livestock enterprises. The grazing and agricultural areas are now fully utilized. Over grazing is prevalent and the grazing resources are on the decline. Modoc County is estimated to be 25 per cent over-stocked. Even though some operators may be removed from this area through the purchase of their lands, stock for the new enterprises will, to the extent of 1500 head, be imported into this area from other regions. This will aggravate the over-grazed condition, seriously impairing range productivity of this area and possibly arousing serious conflict with other interests.

4. Experience and ability to operate a livestock unit lacking - Even if sufficient capital is made available and the problem of over-grazing is successfully handled, the problem of setting up approximately 30 livestock enterprises, operated and managed along reasonably efficient lines, will be difficult if impossible to solve without a long period of education. If the enterprises are to have even a reasonable chance to succeed, skill and experience in management and handling all aspects of the livestock enterprises are required. Whereas some Indians are now capable of performing some of the tasks required in a livestock

enterprise, they would have to depend heavily on high priced talent to perform the tasks required for efficient and successful operation. The proposed livestock units will be forced to choose between paying for high priced management and supervision, both of which will reduce the benefits accruing to the Indian household.

5. Livestock Enterprises Hazardous - The hazards of livestock production in this area are great. New and small livestock enterprises are particularly in danger. Besides major hazards that may be expected, such as sever winters with their heavy stock losses, dry years with their high feed costs, and period of low beef prices, there are also the following ever-present dangers:(9)

   a. Dry farm hay production uncertain and costly - Production of dry farmed grain hay is hazardous even under the best conditions. Reasons for this are: High elevation, short growing season (average of 70 days, but killing frosts may be expected every month of the year), and a meager and uncertain rainfall. In this area, the shallow, leaching, or

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(9) A survey in 1931, states about this area: "Under the present system of livestock production, the smaller ranches have proved unprofitable and have gradually been absorbed by the larger." (VIII and V. of the Bibliography).

enterprise, they would have to depend heavily on high priced talent to perform the tasks required for efficient and successful operation. The proposed livestock units will be forced to choose between paying for high priced management and supervision, both of which will reduce the benefits accruing to the Indian household.

7. Livestock Enterprises Hazards - The hazards of livestock production in this area are great. New and small livestock enterprises are particularly in danger. Besides major hazards that may be expected, such as severe winters with their heavy stock losses, dry years with their high feed costs, and periods of low beef prices, there are also the following ever-present dangers:(9)

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(9) A survey in 1931, states about this area: "Under the present system of livestock production, the smaller ranches have proved unprofitable and have gradually been absorbed by the larger." (VIII and V. of the Bibliography).

alkali accumulating type of soils are dominant and make dry farming even more difficult. (IV)*

b. Production of irrigated hay affected by deficient water supply - Production of meadow and alfalfa hay, essential for winter feed for livestock, is limited because of the water supply and soil conditions. Irrigable soils are nearly fully utilized on the basis of the present available water. Periods of water shortage result in a shortage of hay for winter feeding. (I)*

6. Only a Low and Uncertain Income per Dollar Invested (10) - If all the aforementioned obstacles are overcome, i. e. high capital requirement per household, present and possible over-grazing, lack of experienced and able operators, and hazards inherent in livestock enterprises or existing because of physical or climatic conditions, only a net management income of approximately $52 per year can be expected per unit. This can be raised to approximately $279 per year if Indians do the major portion of the work, with an approximate total required investment of $10,000 per household. This income may meet the total annual household requirements for some of the households. For the major number, this income would be insufficient. Labor opportunities offering possibilities of earning income to supplement the income from the livestock enterprises are extremely limited.(11) On the part of the

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* See Bibliography (10) See Appendix (C)

(11) A Survey in 1931 of this area states: "On some of the larger cattle ranches, men are employed the year round, though as a rule little outside labor is hired except during hay time. It is a common practice for owners of small ranches to exchange labor and equipment during hay harvest season.

latter households, therefore, there will be a tendency to use too much of the gross income from the livestock enterprise for subsistence purposes, with the eventual "consumption" of the livestock enterprise by the Indians.

7. Insufficient Data on Indian Households in the Area - It must be admitted at the outset that insufficient basic information is available regarding the Indian households in this area, such as may be brought out by a household study. The need, ability, and desires of each household cannot be estimated at present on a comparable basis. The selection of certain households for inclusion in the rehabilitation program, unless more detailed study is done, will therefore result in a number of failures due entirely to this factor.

RECOMMENDATIONS

Study of the general economy of the area, the Indians and their resources, the proposed rehabilitation program and its limitations, and the land use problems provide a basis for offering certain recommendations. These are set down in the following:

1. Proposal Should be Soundly Launched and Provide for Indian Participation - In the development of the details of the tentative proposal for rehabilitation of Indians in this area, by launching them on to small stock enterprises, adequate provisions should be made for:

   a. Active participation of Indians in the program for educational and financial reasons.

   b. Efficient supervision, management, and operation.

   c. Closer study of the population to be affected and possible effects of the proposal on the general economy.

2. A Survey Should Determine Possible Means of Increasing Stable Annual Income - A close study should be made of the Pit River area and the Indian population with the view in mind to adjust the population to their present economic and social environment with minimum expenditure of public funds. Such a study should bring out the nature of:

   a. Means of increasing annual income through:

      (1) Land acquisition - Land should be acquired through exchange of grazing land to block up present scattered grazing resources; by purchasing agricultural land for the production

[illegible]

[illegible] - In the development of the activity of the [illegible] [illegible] [illegible]

of supplementary feed for livestock and for subsistence of part-time farms.

(2) Coordination of Multiple Uses of Land - The administration program of Indian land resources should be coordinated with administrative programs of other agencies exercising jurisdiction over natural resources in the Pit River area. Such coordination would encourage the development of sound multiple use programs for all land resources in this region, thus producing maximum total benefits and creating additional employment of which Indians can partake. The U. S. Forest Service, with its conservation and development programs for grazing, timber and recreation, may no doubt extend its programs to include present and future Indian land resources if assured of whole-hearted cooperation. The U. S. Biological Survey and the California State Fish and Game Commission are studying fish and game with a view to developing or enlarging fish and game programs. These also may consider extending their conservation and development programs over Indian resources if assured of cooperation.

(3) Development of Indian Industries - It has been pointed out that labor opportunities are extremely limited and when present are available for only a short period. This forces into idleness the entire Indian population for a large portion of each year. The recreational resources, if fully

[illegible] of [illegible] Indian [illegible] - [illegible] [illegible] [illegible]

developed, can be made to contribute to the welfare of the Indian population. Indians could be encouraged through education and aid, to fill some of the needs of the visiting recreation population by developing hunting and fishing preserves; hiring out as guides; and by the development, preservation, and expansion of Indian arts and crafts.

b. Cultural Adjustment - It will be difficult to bring about a cultural adjustment without first effectively attacking the present abnormally deficient subsistence of the Indian population. Lifting of the level of Indian subsistence to at least the lowest level of the non-Indian population, if accompanied by an educational and educational guidance program, offers the best preliminary step in cultural adjustment of this native population to a new social and economic environment. Such an adjustment deemed necessary here, is not an idealistic one. Only such an adjustment is desired that will enable these Pit River Indians to adjust their culture to non-Indian social and economic philosophies, to the extent of enabling these Indians to fill their minimum basic human needs and desires in a manner less socially and economically undesirable than their present efforts.

3. Relief Aid to Indian Aged and Dependents - A social worker should be assigned to the area for the purpose of securing every benefit of the Social Security law to which needy Ind-

ian households are entitled. Filling of such temporary needs can play a vital part in the initial stages of an effort to raise and stabilize at a higher level, the general social and economic status of the Pit River Indians.

4. The Complexity of the Problem Requires a Comprehensive Rehabilitation Program - It is felt that the problem of rehabilitating the Indian population in this area is a complex one and will prove expensive. Success of efforts to alleviate and stabilize conditions here will require attacking the problem along a broad front by every possible means. "Grubstaking" a few households to a small livestock enterprise is a beginning, but the effort will be ineffective and unsuccessful unless the moral, physical, and mental level of the few Indians that may take part in the proposed enterprises, and other needy, is raised appreciably.

5. Any Rehabilitation Proposal Should Consider Existing Interests and Jurisdictions - Consideration should be given the economic structure of the area in planning the details of any Indian rehabilitation program. The possible real effects of a government land purchase program that may take lands from the tax rolls should be ascertained before "hasty" conclusions are drawn by other public or private interests. The nature of the policy adopted for the administration of any newly purchased and present extensive acreage of Indian allotments and homesteads in the grazing and lumber areas, should be worked out in

the knowledge was available. Utility of such knowledge would be lost a year or two in the future when, as we believe, it will be value and available on a higher level, the government should not hesitate to change of its or its their policies.

5. The capability of the Service Department's Counselling Rehabilitation Program - It is felt that the growth of rehabilitation counselling programs in this area is a response to the well known demands. Number of activities in which and vocational assistance does will require counselling programs along a broad field by trained specialists. "Counselling" is now beginning to a small interesting activities is a beginning, but one which will be investigated and understood by future educational, religious, and social leaders of the Canadian Army, may take part in the programme administration, and other ranks, in which opportunity.

6. The rehabilitation programme should therefore explaining information and direction - Consideration should be given the economic structure of this area in planning the details of any future rehabilitation programs. The practical need activate of a government land development program that may take place when the policy should be constructed before "being" administration are drawn by other public or private interests. The nature of the policy adopted for the administration of any newly developed and planned economic change or initial allotment and transfer should be the primary and further study, should be worked out in

complete coordination with other governmental agencies which are now exercising jurisdictions over natural resources in this area. These agencies are now attempting to adjust administrative conflicts that offer obstacles to effective multiple use of land resources in this area.

CONCLUSION

Approximately 500 Pit River Indians reside largely within the Pit River Basin. All reports based on field studies bring out in clear relief the extremely demoralized economic and social conditions of these Indians. Such conditions have been brought about, these reports indicate, by military and non-military invasion of this territory and by subsequent complete appropriation of Indian resources without compensation. Invasion and appropriation have combined to undermine and virtually destroy the former social and economic structure of Indian life.

Without productive land resources, Indians have depended heavily on the meager supply of wild products now rapidly decreasing. Reasons for this decrease are: the decreasing acreage, available to Indians, supplying wild products (acorns, berries, etc.); the decreasing supply of wild products on lands now available to Indians because of a more intensive use of lands for grazing, recreation, and other uses; the increasing competition for acorns and wild products arising from present wild game conservation programs aiming at heavier stocking of this area with deer and antelope; and the decreasing supply of fish and game because of the exploitive nature of sportsmen and the strict management of fish and game for the benefit of the sportsmen at the expense of the native population.

A small number of the total Indian population have been able to secure labor income from the short summer harvest season. This income, however,

is not only meager but very uncertain.

The decreasing supplies of wild products, together with the absence of productive land resources and labor opportunities, are gradually necessitating heavier and heavier relief subsidies. The scattered and isolated nature of needy Indian households has in the past concealed, and is at present concealing, the extreme need of this entire Indian population. To postpone the consideration of the social and economic maladjustment of 500 Indians because their real need is not generally known cannot be justified on any grounds. Delay would not only have serious physical, mental, and moral effects on the Indian population, but would also affect directly and indirectly, socially and economically, non-Indian welfare.

Efforts have been made to stem the increasingly downward trend of the Indian subsisting level, but such efforts have been small in comparison to the serious need. In a large measure such efforts have been aimed at alleviating in a small way the effects of the serious economic and social conditions rather than attacking the basic causes of them.

Allotting public lands to Indians, and purchasing small plots of non-agricultural land, for instance, were aimed at providing homesites for Indians from which they could not be driven off. This plan failed to fill the need, however, for providing a means of producing or of earning a bare existence.

is not only unique but very dangerous.

The economic supplies of a city primarily depend upon the presence of productive land resources and favorable conditions for industrial development. Lacking one important factor reduces the possibilities of an isolated center of study across boundaries as in the case of Gaza, and in a general consideration, the existence and of this factor cannot guarantee. To produce the accumulation of the world's economic relationships of GCC Qatar because their ties and is the generally those cannot be justified in its present. Only a few can only were nations physical, mental, and social affairs on the Gulfs population, the world also cannot directly be influenced, mainly and economically, non-Gulfs nations.

Others were been made to with the interpretive measure some of the Gulfs industrial level, but such effects have had small in comparison to the orthodox work. In a large measure some affects have been taken as alternative in a small way the effects of the orthodox measures and social conditions rather than attacking the basic causes of them.

Attacking public immediate actions and neglecting most plans of economic development has, for instance, been cause of permitting immediate [illegible] that such that are to prime oil. Then you [illegible] will the good, however, the [illegible] a means of producing or of saving a free economic.

A tentative proposal to aid part of this Indian population through the medium of small livestock enterprises is a step toward adjustment of the basic problem of deficient annual income. A broader program is needed, however, which will provide for supplementing the benefits of the proposed livestock enterprises and for alleviating the serious income deficiency of a greater portion of the needy population in the Pit River Basin. Such a program would of necessity carefully consider both Indian and non-Indian land use problems and programs. Coordination of Indian and non-Indian programs is made necessary by the existence of interrelated problems arising from the limited resources in this area and from the existence of Indian and non-Indian populations socially and economically interdependent.

APPENDIX A

TABLE I

Pit River Indian Population[o]

Approximate Location	Number Households	Number Individuals
1. Alturas-Likely area:		
Alturas	14	68
Likely	11	59
Hot Springs-Canby	6	21
Total for area	31	148
2. Lookout area:		
Bieber	2	?
Adin	5	?
Near Lookout Rancheria	6	?
Lookout Rancheria	5	?
Other	1	?
Total for area	19	74
3. Fall River Area:		
Fall River Valley nr. Day	5	?
Fall River on west side	9	?
Near McArthur	1	?
Fall River Mills	—	—
Total for area	21	64
4. Scattered Groups:		
Big Bend	10	43
Montgomery Creek	2	—
Along Hat Creek and Burney	10	62
Dixie Valley	9	25
Total for area	30	136
Grand total for Pit River area	71	422

[o]See II in Bibliography

APPENDIX A

[illegible]

[illegible]

Activities [illegible]	Number [illegible]	Number initials
1. Overnight-only-area:		
[illegible]	14	[illegible]
[illegible]	41	[illegible]
[illegible]	5	[illegible]
Total for area	60	[illegible]
2. Lunchtime area:		
[illegible]	8	1
[illegible]	5	1
[illegible]	5	1
[illegible]	2	1
[illegible]	1	
[illegible]	1	
Total for area	22	[illegible]
3. Full day area:		
Full day [illegible]	5	1
Full day [illegible]	6	1
[illegible]	2	1
Full day [illegible]		
Total for area	23	[illegible]
4. Unknown [illegible]:		
[illegible]	16	[illegible]
[illegible]	1	
[illegible]	5	[illegible]
[illegible]	4	[illegible]
Total for area	26	[illegible]
Grand total for [illegible] area	[illegible]	[illegible]

[illegible]

APPENDIX A

TABLE II

Pit River Indian Land Resources*

Approximate Location	Manner of Acquisition	Acreage	Agri. Value Little or no
1. Alturas-Likely area:			
Alturas Rancheria	Purchased by Govt.	40	40 acres (fair)
Alturas Camp	" " Indians	3	3 "
Likely Rancheria	" " Govt.	40	40 "
Numerous allotments 12/	Allotted	?	all
2. Lookout area:			
Lookout Rancheria	Purchased by Govt.	50	50 acres
Misc. lands	Set aside by State	360	360 "
Numerous allotments	Allotted	?	all
3. Fall River area:			
Numerous allotments	Allotted	?	most
4. Scattered Groups:			
Big Bend Rancheria	Purchased by Govt.	80	80 acres
Montgomery Creek Ranch	" " "	72	72 "
Numerous allotments	Allotted	?	all

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* See IV in Bibliography

12/ A map is now in the course of preparation that will establish the location and character of Indian Rancherias, allotments and other Indian lands and will bring out the relationship between such lands and the physical and economic pattern in this area.

APPENDIX B

Assuming that 50 head of livestock comprises the proposed household enterprise, and that such a herd will be composed of an assortment of stock generally carried by established enterprises in this area, the enterprise will contain 40 animal units.(VIII)* The capital investment, production credit required, and possible income per household is set forth below.

Capital Investment

Land

Range Land Required - On the basis of U. S. Forest estimates the general carrying capacity of range land in this area will vary between 20 and 50 acres per animal unit for the six months grazing season. Each household with 40 animal units (50 head of cattle will require from 800 to 2000 acres of grazing land. (VIII)*

Agricultural Land Required - Agricultural acreage required will be dependent on: The location in the Pit River area, the physical quality of the land, and whether there is sufficient irrigation water available. In the Alturas-Likely and Lookout areas irrigated agricultural land will produce, on the average, from one to two tons of grain, mixed, meadow, or alfalfa hay per acre. Dry farming in these two areas is comparatively unimportant and is restricted to the production of grains. Dry farm land, when used for hay production, yields one-half to three fourths of a ton per acre. (I)*

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* See Bibliography

On the basis of winter feed requirements of one and one-half tons of hay per animal unit for the six months feeding period, 40 acres of the highest quality irrigated land with sufficient irrigation water available, is required per household. If sufficient water is not available for surface or sub-surface irrigation of crop land, making dry farming necessary for hay production, a total of 80 acres of the highest quality dry farm land will be required per household.

Total land requirements for 30 households

Grazing acreage: 24,000 to 60,000 acres.

Agricultural acreage: High quality irrigated land (40 acres per household) - 1200 acres of high quality dry farmed land (80 acres per household) - 2400 acres.

Total cost of required land - Irrigated land ranges in value in this area from $20 to $40 per acre. Dry farm grain and hay land ranges in value from $10 to $20 per acre. Range land may vary from $5 to $10 per acre. Total costs may be estimated as follows:

	Cost Selected	Per Household		Total for 30 Households	
		Acreage	Value	Acreage	Value
Grazing land	$5 per ac.[13/]	1200	$6000	36,000	$180,000
Irrigated "	$30 " "	40	1200	1,200	36,000
Total Costs			$7200		$216,000

Costs for land would be the same if dry farm land was substituted for irrigated land as twice the acreage would be required at half the cost.

13/ The selected price of $5 per acre is conservative. It is doubted if suitable grazing land can be purchased for less than $10 per acre.

In the basis of shorter land requirements of the one remaining farm of the par related work for the accounting (Ending yields), the farmer of 1 is fairly quality irrigation land with substantial irrigation water rotations, is expected for farmers. The excluding value is not basis the farmers or alternative irrigation of this land, making by leading remaining for by producing, a total of 20 acres of the 40 plant growing by farm land will be required per farmer (40).

Total land requirements for 20 farmers

Growing expenses: $4,000 to $8,000 acres.

Irrigation expenses: High quality irrigation land (40 acres per farmer) - $200 acres of high quality dry-farmed land (40 acres per farmer) - $20 acres.

Total cost of irrigated land - Irrigated land prices in value is $200 acres plus $20 in $80 per acres. The farm price and dry land prices is acres plus $10 0- $20 per acre. Single land dry only from $5 to $20 per acre. Total farm dry is estimated at following:

	Cost for irrigated land		Total for dry farmed land	
	Acreage	Value	Acreage	Value
Growing land (Ending yields)	40	$200	20,000	$10,000
Irrigation	40	$20	1,000	$20,000
Total farm		$220		$10,000

Farm for farm would be the farm 1/ dry farm farm and irrigation land to value the farming will be required at half the farm.

1/ The average yield of 1 per acre is necessary. It is needed if possible price, farm can be produced for farm farm 1/ per farm.

Improvements and Equipment

On the basis of recent cost estimates on livestock enterprises in this area, investments are deemed necessary for the following: Corrals, buildings, improvements, equipment, feed, workstock, and dwellings. Value of these total approximately $20 per animal unit (a conservative figure as these costs are based on a 549 animal unit enterprise). VIII*

Total cost for these items will be approximately $800 per household and $24,000 for the 30 households.

Stock 14/

Investment in beefstock for the 50 head household livestock unit will require $37.50 per animal unit based on 1935 values of cattle in this area. (VIII)* This investment will approximate $1500 per household or a total of $45,000 for the 30 households.

Total Capital Investment

Item	Per Household		Total for 30 Households	
Land:				
Grazing	$6,000		$180,000	
Agricultural	1,200	$7,200	36,000	$216,000
Improvements: and Equipment		800		24,000
Cattle		1,500		45,000
Total Capital Investment		$9,500		$285,000

* See Bibliography

14/ Cash outlay for cattle may be reduced because of the possibility of using livestock available from a livestock revolving loan fund created in other areas through the purchase of drought relief cattle. Cash outlay for grazing land may be slightly reduced as Indians now control thousands of acres of mountain land that may fill part of the need for grazing land. The usability of this land is doubtful because of its poor quality and scattered nature. A range inventory should be made of this land before it is included in a management plan.

[illegible]

[illegible]

[illegible]

Production Credit Required

Since it is not known just what type and age of livestock will comprise the proposed livestock enterprises, it is difficult to approximate the extent of production credit required. Recent efficiency studies in this area recommend that steers be marketed at two years of age. If the livestock loaned to the households comprises only mature breeding animals, two years production credit should be made available. If the initial herd comprises livestock of assorted ages, one full year's cost of operation should be available in the form of production credit. Part of the second year's cost of operation should also be available for efficient operation of the enterprises.

It is estimated that it costs approximately $14.35 per year to carry one animal unit in this area. VIII* This figured may be reduced, however, as one item of $2.28 for interest on investment enters into the cost that may be eliminated or modified. Another item of range and pasture cost of $3.09 may be reduced. The item of 48 cents per animal unit for taxes, insurance and miscellaneous may be modified. It is conservatively estimated that a minimum of $10 per animal unit may be required for production credit per year with a possible two year period to be financed. Production credit needed on the above basis would be approximately $400 per household or $12,000 for the 30 households per year. If mature breeding stock are predominant in the 50 head livestock unit, $800 per household will be required for a two year period and

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* See Bibliography

$24,000 will be required for the 30 households.

Possible Income

Assuming that the 50 head initial herd of each household will comprise the assortment of livestock common in this area, such a herd will contain approximately 40 animal units. On the average a ratio exists of 2.1 animal units per cow or approximately 20 cows per household. VIII* Calves raised, number 65 per cent of the number of cows, or 13 calves. This crop of 13 calves may be considered as the major source of animal income.

Possible Income from Livestock Enterprise

	Per animal unit	For enterprise (40 animal unit)
Value of beef produced	$ 15.67	$ 626.80
Cost of production (VIII)	-14.35	-574.00
Management Income	$ 1.32	$ 52.80

It is possible to increase the management income in the case of the proposed enterprise by eliminating or modifying some of the items generally entered as costs. The income accruing to the household may approximate the following:

	Per animal Unit	For each enterprise
Value of beef produced	$ 15.67	$ 626.80
Approximate costs	-8.69	-347.60
Possible income	$ 6.98	$ 279.20

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* See Bibliography

The above possible income was approximated by the following manner:

	Per animal unit	For each enterprise
Management income	$ 1.32	$ 52.80
Plus Value of operator's labor	.79	31.80
Labor and Management Income	$ 2.11	$ 84.40
Plus Interest on investment 15/	2.28	91.20
	$ 4.39	$ 175.60
Plus hired labor that may be done by operator on beef enterprise	1.06	42.40
	$ 5.45	$ 218.00
Add value of labor in hay production that may be done by operator. 16/	1.53	61.20
Total possible income	$ 6.98	$ 279.20

15/ May be added to income as no interest will probably be charged Indian operators.

16/ Total costs per acre for cultural and harvesting - $3.53 for yields of 1.4 tons per acre. (Yields of land valued at $30). Since it requires 40 acres of hay land for the enterprise of 40 animal units 1 acre - 1 a.u.

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